Jun 20th, 2:10 PM - 2:30 PM

Anadromous Fish Reintroduction in the Upper Columbia River Basin An Overview

Stephen Smith
UCUT

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An Overview

June 20, 2017

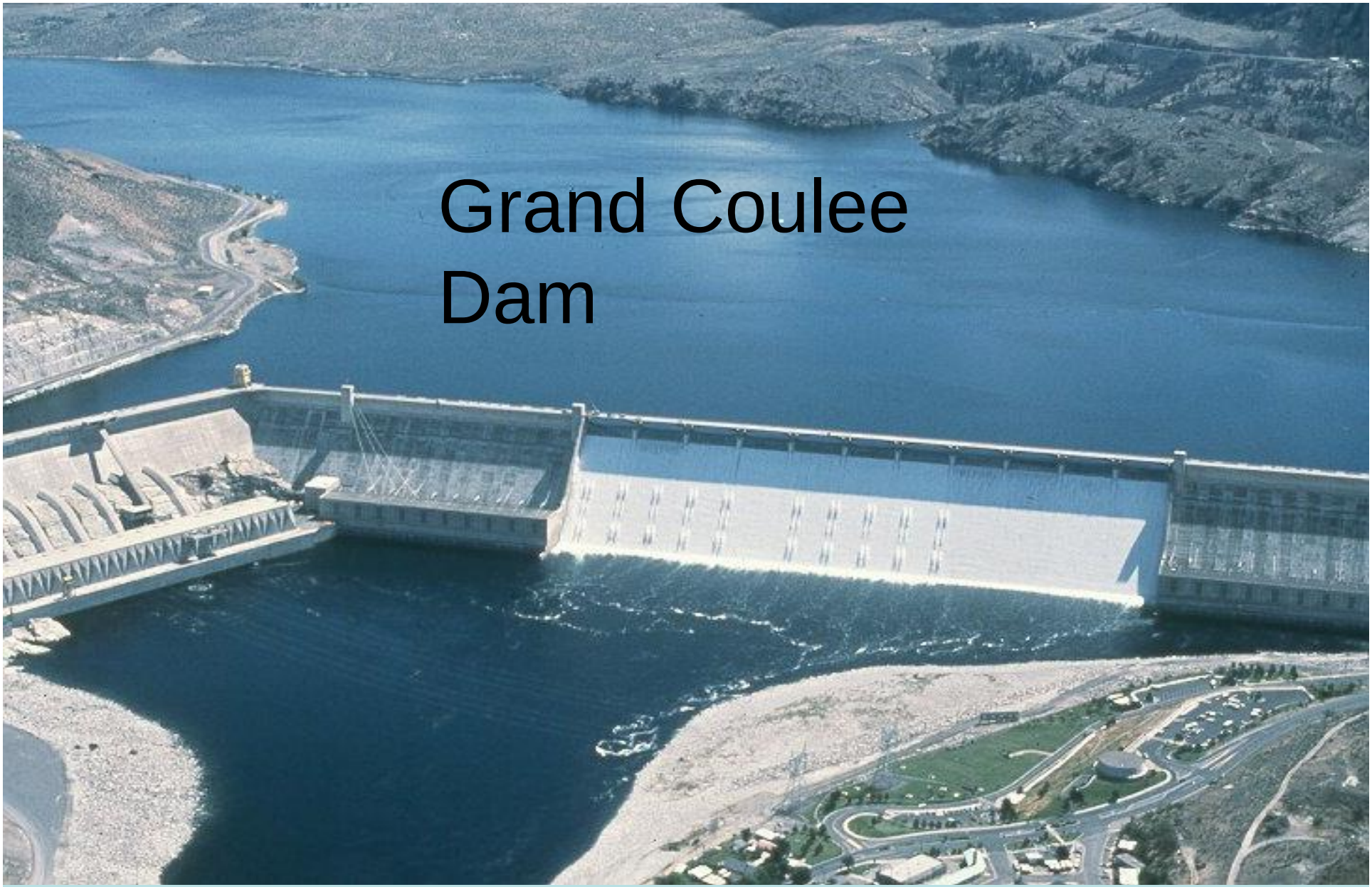
Stephen Smith, UCUT

Presentation Outline

- Effects of Upper Columbia River Blockages
- Joint Fish Passage Paper
- 3 Forums for Salmon Reintroduction
- Phase 1 Work

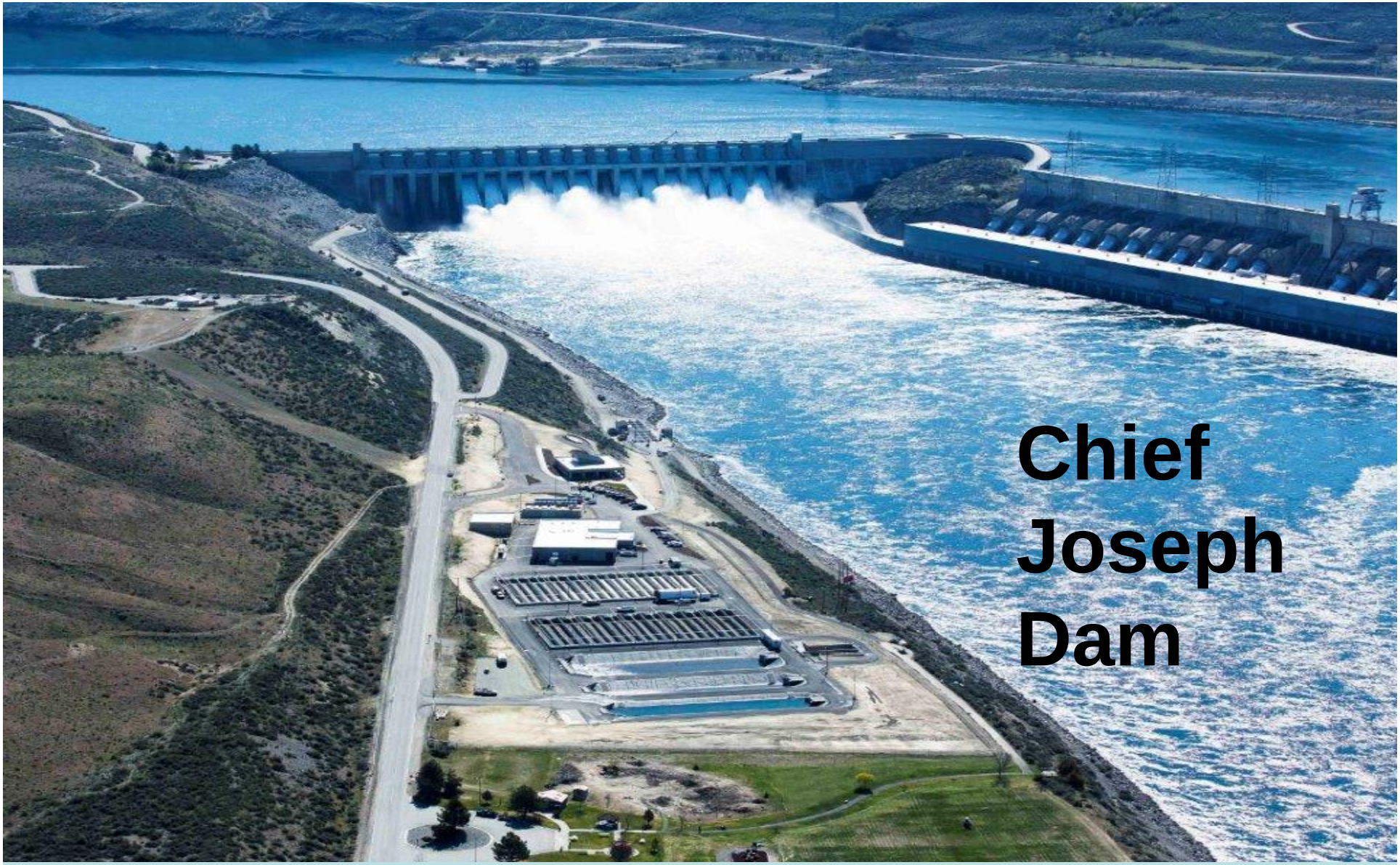
Columbia Basin

Canadian Dams of Interest



Built in 1942 **550’ (168 m) high**

151 mile (243 km) reservoir **6,809 Mw capacity**



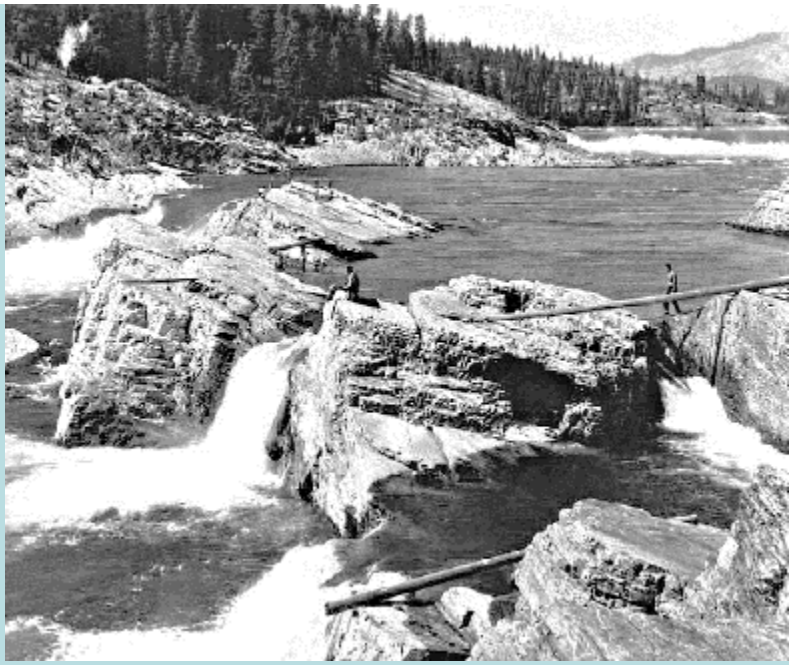
Built in 1955 **236’ (72 m) high**

51 mile (82 km) reservoir **2,260 Mw capacity**

Canadian Dams

- **Annual average runs above Grand Coulee of 2.6 – 3.7 million salmon and steelhead**
- **Thousands of stream miles of mainstem and tributary habitat**
- **4 major nursery lakes**

- **5 Upper Columbia tribes annual consumption of 6.8 to 13.1 million pounds (~650,000 fish)**



- **First Nations' annual consumption of 125,000 – 750,000 salmon and steelhead**

- **Lower river tribes' annual harvest of**

  1.5 to 2.6 million salmon and steelhead from above Chief Joseph Dam.

Why Reintroduction Now?

- Unmitigated injustice to tribes and other upper basin communities and economies
- Technology has improved for adult and juvenile salmon passage at high head dams
- New passage technologies have little, if any impact, on current project beneficiaries: power generation, flood control, and irrigation

Why Reintroduction Now?

- Reintroduction may be, and likely is, viable and needs to be investigated
- Nearby Sockeye & Chinook runs very productive
- Federal government is requiring fish passage at most private dam blockages
- Climate Change – get the salmon back to cooler habitats

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A Joint Paper of
The Columbia Basin Tribes & First Nations
JULY
2015
FISH PASSAGE &
REINTRODUCTION
into the
U.S. & CANADIAN
UPPER COLUMBIA BASIN

Columbia River Treaty

- **December 2013**:
  - "The United States should pursue a joint program with Canada, with shared costs, to investigate and, if warranted, implement restored fish passage and reintroduction of anadromous fish on the mainstem Columbia River to Canadian spawning grounds."

Northwest Power and Conservation Council

Phased Approach to Reintroduction

"Investigate habitat availability, suitability and salmon survival potential in habitats above Grand Coulee."

Columbia River F&W Program

- "Reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams to mainstem reaches and tributaries in the United States"

- 3 Phases
  - Phase 1: Information Review (12/16)
  - Phase 2: Pilot Reintroductions and Interim Passage Facilities
  - Phase 3: Permanent Reintroduction and Facilities

Tribal Action

- Tribes reserve the right to reintroduce salmon
- Pilot reintroductions are a near term possibility

Phase 1 Implementation

- U.S. Habitat Assessment
- Donor Stock Assessment
- Risk Assessment
- Life-Cycle Model

- Review of High Head Dam Fish Passage Facilities

Major Reintroduction Risks

- Evolutionary (genetics)
- Demographic (numbers)
- Ecological (predation and competition)
- Disease

As identified in Anderson et al. 2014 (NAJFM; v34)

Life Cycle Modeling

Evaluate reintroduction options and strategies

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Identify key uncertainties, research and facility needs

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Provide data needed to move the programs forward

Phase 1 Report

- Habitat Assessment
- Donor Stock Assessment
- Risk Assessment
- Reintroduction Strategies
- High Head Dam Fish Passage Facility Options
- Life Cycle Modeling
- Alternative Fish Passage Facility Configurations
- Key Uncertainties
- Cost and Financing Considerations
- Recommendations

Floating Surface Collector

Floating Surface Collector; Net Guidance System

Floating Surface Collector

Whooshh “Salmon Cannon”

West Coast Reintroductions

- 20 other West Coast watersheds
- 48 dams

THANK YOU